[0058] In another embodiment the electronic reader incorporates two or more double-sided electronic pages. Upon turning each upper page of the e-reader, said page is discretely refreshed, while the user is viewing a subsequent electronic page of the reader.

[0059] In a further embodiment, an electronic reader is provided that, preferably, incorporates two or more turnable electronic pages bound or otherwise coupled to one another to allow turning. Upon downloading the information onto the e-reader, the user is able to detach a page from the main e-reader unit and share the information that has been downloaded onto said electronic page with a second user.

[0060] In another embodiment two electronic readers are provided that can be joined together to form a single e-reader unit. Preferably each individual e-reader incorporates one or more turnable single or double-sided electronic pages bound or otherwise coupled to one another to allow turning. Preferably each electronic page of the e-reader is bound together around a central spinal column.

[0061] In general embodiments of the present invention provide an electronic reader device that gives the user a page-turning experience. The user is presented with an electronic reader that preferably incorporates two or more electronic pages in the form of display devices that are bound to a central spinal column. The pages of the e-reader can be turned about the central spinal column or other coupling which allows turning. As the upper electronic page of the e-reader is turned over by the user, said upper page is refreshed, while the user is reading the underlying page, which has become the upper electronic page as a result of the turning motion. In this way the user has an enhanced reading experience.

EXAMPLE 1

An Electronic Reader that Incorporates at Least Two Electronic Pages that are Electronically Refreshed Upon being Turned

[0062] In a first embodiment, the electronic reader device incorporates two or more displays that are integrated together in the form of electronic pages about a central spinal bind as is shown in FIG. **1**. Each display is connected to the central spinal bind in at least one position and in such a way that each electronic page can be rotated about the central spinal bind individually.

[0063] In a preferred embodiment two or more pages **1**, **2** are bound to a central spinal bind or column **8**. The central spinal column **8** comprises a number of longitudinal sections as is shown in FIG. **1**. These sections both house the driver electronics of the device (of each page) and enable the electronic pages of the e-reader to be turned individually, as is further described below. The central spinal column may be fixed with respect to one of the electronic pages, or it may be turnable with respect to any of the electronic pages. The central spine preferably comprises a (cylindrical) tube as is shown in FIG. **1**, but other spinal designs may also be employed. A rectangular block bind **9** is seen in FIG. **2** and is able to be operated in the same way as the spinal column, previously described. The spine is preferably composed of a plastic material, although other suitable materials may be used. In each case the electronic pages are able to rotate around the central bind to allow for the electronic pages to be refreshed.

[0064] The motion of turning the pages of the e-reader enables each page to refresh as or soon after it is turned. FIG. **3** shows the action of turning the electronic pages about the central spinal bind. When the user turns the page **1** (s)he is presented immediately with the information displayed on page **2** that had been written into this display device while the user was reading page **1**.

[0065] An optimal further feature of the e-reader device is that each electronic page is locked into position before said page begins the refreshing process. This feature is a benefit when a user wishes to maintain the information that has been downloaded on both the current page and the previous page (s), allowing the user to retrieve information from two or more pages.

[0066] Each page is preferably connected to the central spine as shown, wherein the connectors of each said page are positioned within a sleeve part of the rotatable section of the spine, for example on page mounts **3**,**4**.

[0067] FIG. **3** demonstrates how each page of the device is turned about the central spine. As an upper page **1** (as shown in FIG. **1**) of the e-reader is turned (as shown in FIG. **3**), the upper page refreshes during or shortly after the turning motion. In embodiments of the present invention this refreshing process occurs out of sight from the user due to the fact that the refreshing is completed either during the turning motion or soon after the turning of the upper page is complete. In either case, the page that is being refreshed is hidden behind the subsequent upper electronic page and so the user is not privy to the refreshing process enabling a smooth page-turning process. This feature of the e-reader is of particular importance to technology that incorporates display media that are not capable of a fast refresh rate. An example is electrophoretic-type displays such as those available from E-Ink Corporation of Cambridge, Mass., USA (see, for example, U.S. Pat. No. 5,961,804). Our technology discretely enables a low refresh rate display to refresh out of sight of the user during the turning motion of the electronic page. FIG. **4** shows the device after the upper page **1** has been turned to the back, resulting in the underlying electronic page surface coming to the top of the pages, as shown. The user is able to read text that is stored electronically using this page turning feature for sequential page reading.

[0068] There is scope for the central spinal column of the e-reader device to incorporate several features to further aid the operation of the device. An operating function, such as a main on/off operating function or a menu operating function of the device, in the form of, for example a button, may be positioned on one of the sections of the column. A convenient location for such an operating device is the upper or lower section of the bind **5**, **6** shown in FIG. **5**.

[0069] An optimal further feature of the device is the incorporation of a scroll wheel **7** attached at a position on the central spinal column, as shown in FIG. **5** and in more detail in FIG. **6**. Such a scroll wheel may, for example, be used to allow the user to quickly locate the required book, page, document or file stored within the e-reader from a menu.

[0070] As mentioned above, in order to further aid the experience of reading, the e-reader preferably incorporates the addition of a touch screen display. Such a display provides the user with additional function which allows the user to be able to book mark pages of the device by simulating the action of folding over the corner of a page. The addition of touch screen capability within the c-reader device enables the user to, for example, "electronically" fold over the corner of an electronic page **11** as is illustrated in FIG. **7**, in order to book mark a chosen page with a book mark symbol by touching the